

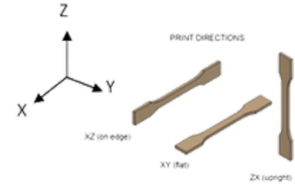


KRATIR PA11 CF

Material class: Polyamide 11 / Carbon Fiber

High Strength & Part Repeatability

- Low moisture uptake, dimension stable
- Exceptionally ductile in Z-direction
- **97% bio-based polymer**



| Property | Method | Units | Value XZ** (on edge) | Value ZX** (upright) |
|------------------------------|------------------|-------|-------------------------|-------------------------|
| Mechanical properties | | | | |
| Tensile Modulus | ISO 527 Type 1BA | MPa | 8900 | 1400 |
| Tensile Strength at yield | ISO 527 Type 1BA | MPa | no yield | no yield |
| Tensile Strength at break | ISO 527 Type 1BA | MPa | 105 | 34 |
| Elongation at yield | ISO 527 Type 1BA | % | no yield | no yield |
| Elongation at break | ISO 527 Type 1BA | % | 4.5 | 10.8 |
| Flexural Modulus | ISO 178 | Mpa | 8098 | 1471 |
| Flexural Stress at break | ISO 178 | Mpa | 70 | 35 |
| Flexural Strain at break | ISO 178 | % | 1.3 | 1.3 |
| Impact Strength | ISO 180 | J/m | | |
| Impact Strength | ISO 180 | kJ/m2 | | |

** XZ/ZX Bars cut out of 3D printed plates on edge and in Z direction printed according to guidelines



| Property | Method | Units | Value |
|--|-------------|-------|-----------|
| Thermal properties | | | |
| Glass transition temperature (Tg) | ISO 11357-1 | °C | |
| Melting temperature | ISO 11357-3 | °C | 189 |
| Vicat softening temperature | ISO 306/B50 | °C | |
| Temp. of deflection under load (1.80 Mpa)* | ISO 75-1/-2 | °C | 180 |
| Temp of deflection under load (0.45 Mpa)* | ISO 75-1/-2 | °C | |
| Physical properties | | | |
| Filament diameter (+/- 0.05 mm) | | mm | 1.75/2.85 |
| Density | ISO 1183-1 | g/cm3 | 1.13 |
| Humidity absorption (70 °C, 62% r.H.)* | ISO1110 | % | 0.7-0.9 |
| Water absorption (23 °C saturated)* | ISO 62 | % | 1.3-1.7 |

* Injection moulding data



Recommended processing conditions

| | |
|------------------------------|---|
| Nozzle temperature | Recommended 285 °C (260 °C - 290 °C) |
| Bed temperature | Recommended 110 °C (90 °C - 110 °C) |
| Chamber temperature | Recommended 90 °C (23 °C - 90 °C) |
| Bed material | (Textured) PEI Sheet, Glass, Carbon Fiber Plate |
| Adhesion promoter | Magigoo PA |
| Nozzle diameter | ≥ 0.4mm, hardened steel nozzle |
| Print speed | Recommended: 30 mm/s (30-100 mm/s) |
| Drying instructions filament | 120 °C for 6-8 hours |

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